Abstract of the Disclosure

Wafer-holding structures formed from thermosetting resins are disclosed for use in semiconductor processing including, for example, SIMOX wafer processing. In one embodiment a pin is disclosed that is adapted to receive a wafer edge, and is coupled with a wafer holder assembly. The pin can be filled with a conductive material to provide an electrical pathway between the wafer and the wafer holder assembly, which can be coupled to a ground. This arrangement provides a conductive path for inhibiting electrical discharges from the wafer during the ion implantation process. The pin exhibits thermal isolation characteristics and sufficient hardness so as to not effect localized thermal dissipation of the wafer, yet is sufficiently soft so as to not mark or otherwise damage the wafer.